Check List 2006: **2**(2)
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

Amphibia, Brachycephalidae, *Eleutherodactylus skydmainos*: First country record, Ecuador

Diego F. Cisneros-Heredia

College of Biological and Environmental Sciences, Universidad San Francisco de Quito, Casilla Postal 17-12-841 Quito, Ecuador. E-mail: diegofrancisco_cisneros@yahoo.com

The herpetofauna from the Amazonian lowlands used to be conceived as very well-known. However, recent studies have demonstrated that we are quite far from knowing the diversity of amphibians and reptiles that inhabit the extensive and heterogeneous Amazonian lowlands (Tuomisto et al. 1995, Caldwell 1996, Duellman 1999, Lynch 2002, 2005, Faivovich et al. 2005, Cisneros-Heredia 2003, 2006, Guayasamin et al. 2006).

Studies carried out between 1998 and 2002 at the Tiputini Biodiversity Station (TBS), Amazonian lowlands of Ecuador, revealed an amazing mega-diversity of amphibians (121 species); including at least 20 described species of *Eleutherodactylus* (Cisneros-Heredia 2003, 2006, Guayasamin et al. 2006). Examination of specimens of the *Eleutherodactylus conspicillatus* group (sensu Lynch and Duellman 1997) collected at TBS revealed the presence of a species previously unreported to Ecuador: *Eleutherodactylus skydmainos* Flores and Rodríguez, 1997.

Eleutherodactylus skydmainos (sensu Padial and De la Riva 2005) was previously known to inhabit the Amazonian lowlands and Andean foothills of Peru, Bolivia, and Brazil (Flores and Rodríguez 1997, Padial et al. 2004, Padial and De la Riva 2005, Rodríguez et al. 2004). Herein I report the first record of *E. skydmainos* for the Republic of Ecuador: DFCH-USFQ W201 (adult male with nuptial pads and vocal slits, Figure 1) and W204 (juvenile), both collected at the Tiputini Biodiversity Station (00°37'5"S, 76°10'19"W, 250 m elev., Figure 2), Province of Orellana, on 06 January 2000 by D. F. Cisneros-Heredia and M. Rodríguez.

Both specimens show, among others, the three diagnostic characters selected by Padial and De la Riva (2005) to diagnose *E. skydmainos*: granular skin texture of posterior and lateral margins of the belly, a fin-like middorsal tubercle on a bold black spot, and a poorly-elevated interocular fold. Further, they have tarsal folds, a pair of dorsolateral ridges (low in the adult specimen as an artifact of preservation, but conspicuous in life), immaculate venter, and basal toe webbing. The combination of all of these characters clearly separate *E. skydmainos* from the other sympatric species of the *E. conspicillatus* group: *Eleutherodactylus conspicillatus*, *E. malkini*, and *E. peruvianus*.

Figure 1. Dorsal view of *Eleutherodactylus skydmainos* (adult male, DFCH-USFQ W201) collected at the Tiputini Biodiversity Station, province of Orellana, Ecuador; below, a detail of the fin-like middorsal tubercle.

Check List 2006: **2**(2)
ISSN: 1809-127X

NOTES ON GEOGRAPHIC DISTRIBUTION

The nearest locality of *E. skydmainos* to TBS is "Alva, between Chachapoyas and Bagua Grande", Department of Amazonas, northeastern Peru. Thus, the new record presented herein extends the known distributional range of *E. skydmainos* ca. 600 Km NE airline (Figure 2).

This new record increases the number of species of *Eleutherodactylus* in Ecuador to 139 (Coloma 2005-2006), and to 24 for Amazonian Ecuador (Table 1). However, the species richness of *Eleutherodactylus* occurring in Amazonian Ecuador is still underestimated; several species are undescribed (e.g., there is at least one unnamed canopy-dweller *Eleutherodactylus* sympatric with *E. aureolineatus*, pers. obs.); the taxonomic status of several taxa remains uncertain (e.g. *E. ockendeni*, *E. conspicillatus/peruvianus*), and some species are still expected to be found (e.g., *E. delius* and *E. luscombei* could occur in Ecuador). Thus the diversity of *Eleutherodactylus* in Ecuador is still far from being known.

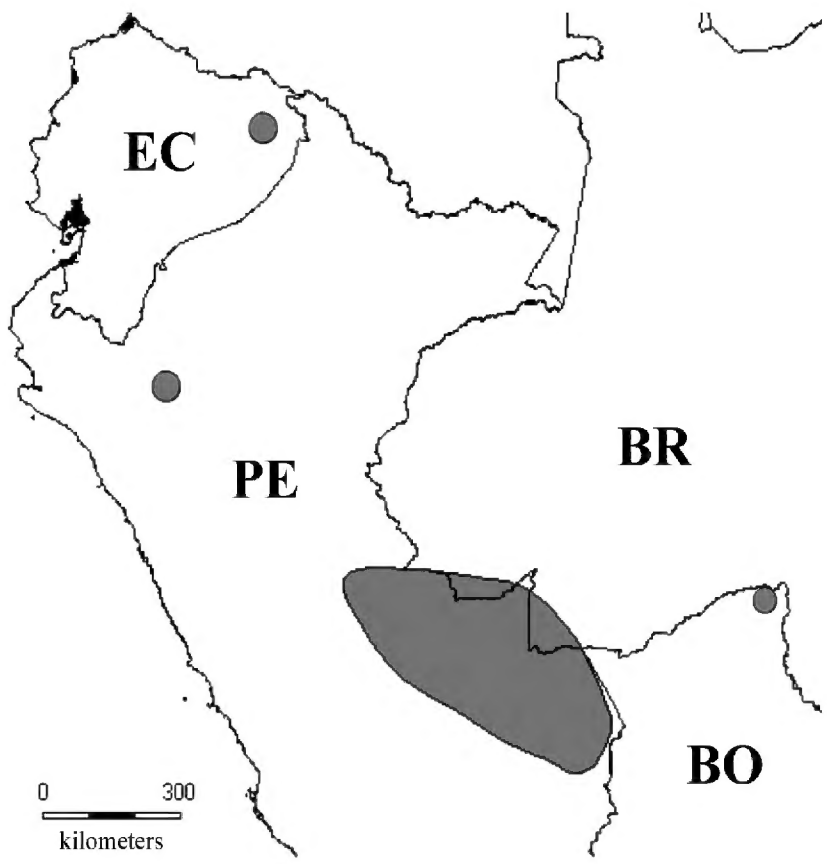

Figure 2. General distribution of *Eleutherodactylus skydmainos*. Map based on Rodríguez et al. (2004), and subsequent records by Padial et al. (2004), Padial and De la Riva (2005), and this paper. EC = Ecuador, PE = Peru, BR = Brazil, BO = Bolivia.

Table 1. Species of *Eleutherodactylus* recorded in the Amazonian lowlands region of the Republic of Ecuador. Species recorded at the Tiputini Biodiversity Station (TBS), Province of Orellana, Ecuador are marked with an asterisk *.

Eleutherodactylus acuminatus Shreve, 1935*
Eleutherodactylus altamazonicus Barbour and Dunn, 1921*
Eleutherodactylus aureolineatus Guayasamin, Ron, Cisneros-Heredia, Lamar and McCracken, 2006*
Eleutherodactylus carvalhoi Lutz, 1952
Eleutherodactylus conspicillatus Günther, 1859*
Eleutherodactylus croceoinguinis Lynch, 1968*
Eleutherodactylus diadematus Jiménez de la Espada, 1875*
Eleutherodactylus lacrimosus Jiménez de la Espada, 1875*
Eleutherodactylus lanthanites Lynch, 1975*
Eleutherodactylus librarius Flores and Vigle, 1994*[?]
Eleutherodactylus malkini Lynch, 1980*
Eleutherodactylus martiae Lynch, 1974*
Eleutherodactylus nigrovittatus Andersson, 1945*
Eleutherodactylus ockendeni Boulenger, 1912*
Eleutherodactylus orphnolaimus Lynch, 1970*
Eleutherodactylus paululus Lynch, 1974*
Eleutherodactylus peruvianus Melin, 1941*
Eleutherodactylus pseudoacuminatus Shreve, 1935*
Eleutherodactylus quaquaversus Lynch, 1974
Eleutherodactylus skydmainos Flores and Rodríguez, 1997*
Eleutherodactylus sulcatus Cope, 1874*
Eleutherodactylus trachyblepharis Boulenger, 1918
Eleutherodactylus variabilis Lynch, 1968*
Eleutherodactylus ventrimarmoratus Boulenger, 1912*

Acknowledgments

I am grateful to David Romo, Consuelo Barriga de Romo, Kelly Swing, and Mayer Rodríguez for their continuous help during the field work at Tiputini Biodiversity Station; to Ignacio De la Riva, Luis Coloma, and John Lynch for providing relevant literature; and to José Manuel Padial for his comments on the manuscript. This paper is published as part of the project "Herpetofauna of the Tiputini Biodiversity Station, Amazonian Ecuador" supported by Tiputini Biodiversity Station / College

NOTES ON GEOGRAPHIC DISTRIBUTION

of Biological and Environmental Sciences, Universidad San Francisco de Quito, María Elena Heredia, and Laura Heredia. The Ministry of Environment of Ecuador provided research authorization N° 19-IC-FAU-DFN.

Literature Cited

Caldwell, J. 1996. Diversity of Amazonian Anurans: The Role of Systematics and Phylogeny in Identifying Macroecological and evolutionary Patters. Pp. 73–78. In A. C. Gibson (ed.), Neotropical Biodiversity and Conservation. Ocassional Publications 1 of the Mildred E. Mathias Botanical Garden. Los Angeles. University of California Press.

Cisneros-Heredia, D. F. 2003. Herpetofauna de la Estación de Biodiversidad Tiputini, Amazonía Ecuatoriana. In S. De la Torre and G. Reck (eds.), Ecología y Ambiente en el Ecuador: Memorias del I Congreso de Ecología y Ambiente, Ecuador país megadiverso. CD. Quito. Universidad San Francisco de Quito.

Cisneros-Heredia, D. F. 2006. La Herpetofauna de la Estación de Biodiversidad Tiputini, Ecuador. B.Sc. Thesis. Quito. Universidad San Francisco de Quito. 129 p.

Coloma, L. A. 2005-2006. Anfibios de Ecuador Ver. 2.0. Electronic database accessible at http://www.puce.edu.ec/zoologia/vertebrados/amphibiawebec/index.html. Museo Zoología, Pontificia Universidad Católica del Ecuador. Quito, Ecuador. Captured on July 2005.

Duellman, W. E. 1999. Distribution Patterns of Amphibians in South America. Pp. 255–328. In W. E. Duellman (ed.), Patterns of Distribution of Amphibians: A global perspective. Baltimore. The John Hopkins Univ. Press.

Faivovich, J., J. Moravec, D. F. Cisneros-Heredia, and J. Kohler. 2005. A new species of the *Hypsiboas benitezi* group from the western Amazon Basin (Amphibia: Anura: Hylidae). Herpetologica 62 (1): 96–108.

Flores, G. and L. O. Rodríguez. 1997. Two new species of the *Eleutherodactylus conspicillatus* group (Anura: Leptodactylidae) from Peru. Copeia 1997: 338-394.

Guayasamin, J. M., S. Ron, D. F. Cisneros-Heredia, W. Lamar, and S. F. McCracken. 2006. A new species of frog of the *Eleutherodactylus lacrimosus* assemblage (Leptodactylidae) from the western Amazon Basin, with comments on the utility of canopy surveys in lowlands rainforest. Herpetologica 62 (2): 191–202.

Lynch, J. D. and W. E. Duellman. 1997. Frogs of the genus *Eleutherodactylus* (Leptodactylidae) in western Ecuador: systematics, ecology, and biogeography. The University of Kansas Natural History Museum Special Publications 23:1–236.

Lynch, J. D. 2002. A new species of the genus *Osteocephalus* (Hylidae: Anura) from the western Amazon. Revista de la Academia Colombiana de Ciencias Exactas Físicas y Naturales 26 (99): 289–292.

Lynch, J. D. 2005. Discovery of the richest frog fauna in the World – An exploration of the forests to the North of Leticia. Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales 29 (113): 581–588.

Padial, J. M. and I. De la Riva. 2005. The taxonomic status of *Eleutherodactylus skydmainos* Flores & Rodríguez, 1997 and *E. karcharias* Flores & Rodríguez, 1997 (Anura: Leptodactylidae). Amphibia-Reptilia 26: 553–556.

Padial, J. M., L. González, S. Reichle, R. Aguayo, and I. De la Riva. 2004. New species record of the genus *Eleutherodactylus* (Anura: Leptodactylidae) for Bolivia. Graellsia 60 (2): 167–174.

Rodríguez, L., J. L. Martinez, J. I. Monteza, A. Angulo, and C. Gascon. 2004. *Eleutherodactylus skydmainos*. In IUCN, IUCN Red List of Threatened Species. Accessible at http://www.iucnredlist.org. Captured on 07 July 2006.

Tuomisto, H., K. Ruokolainen, R. Kalliola, A. Linna, W. Danjoy, and Z. Rodríguez. 1995. Dissecting Amazonian biodiversity. Science 269: 63–66.

Received July 2006
Accepted July 2006
Published online August 2006